

IN THE CLAIMS:

Claims 1-20 (Canceled)

21. (Currently Amended) A semiconductor device, comprising:

~~a co-doped germanium buried layer doped located over a doped substrate, said buried layer doped throughout with germanium and a p-type dopant;~~
a doped epitaxial layer located over ~~the co-doped germanium~~ said buried layer.

22. (Canceled)

23. (Currently Amended) The semiconductor device as recited in Claim 21 22

wherein the said p-type dopant is boron.

24. (Currently Amended) The semiconductor device as recited in Claim 21 wherein a dopant concentration of ~~the co-doped germanium~~ said buried layer ranges from about 1E15 atoms/cm³ to about 1E20 atoms/cm³, a dopant concentration of the doped substrate ranges from about 1E14 atoms/cm³ to about 1E15 atoms/cm³, and a dopant concentration of the doped epitaxial layer ranges from about 1E14 atoms/cm³ to about 1E15 atoms/cm³.

25. (Currently Amended) The semiconductor device as recited in Claim 21 wherein ~~the co-doped germanium~~ said buried layer has a germanium concentration ranging from about

2E20 atoms/cm³ to about 7E20 atoms/cm³.

26. (Currently Amended) The semiconductor device as recited in Claim 21 wherein
~~the eo-doped germanium~~ said buried layer has a thickness ranging from about 1 μm to about 10
 μm .

27. (Currently Amended) The semiconductor device as recited in Claim 21 wherein
~~the~~ said doped substrate, ~~eo-doped germanium~~ said buried layer, and ~~the doped~~ said epitaxial
layer collectively have a thickness ranging from about 2 μm to about 20 μm .

Claims 28-36 (Canceled)

37. (Currently Amended) An integrated circuit, comprising:
~~a eo-doped germanium~~ buried layer located over a doped substrate, said buried layer
doped throughout with germanium and a p-type dopant;
a doped epitaxial layer located over ~~the eo-doped germanium~~ said buried layer;
transistors located over ~~the~~ said doped epitaxial layer; and
interconnects located within interlevel dielectric layers located over ~~the~~ said transistors,
which connect ~~the~~ said transistors to form an operational integrated circuit.

38. (Currently Amended) The integrated circuit as recited in Claim 37 wherein the
~~eo-doped germanium buried layer further includes~~ said p-type dopant is boron.

39. (Currently Amended) The integrated circuit as recited in Claim 37 wherein the ~~co-doped germanium~~ said buried layer has a germanium concentration ranging from about 2E20 atoms/cm³ to about 7E20 atoms/cm³.

40. (Original) The integrated circuit as recited in Claim 37 further including additional active and passive devices.